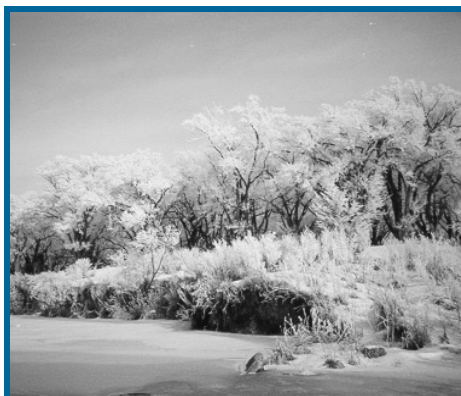


National Weather Service, Northern Indiana



New Wind Chill Index

body temperature. Low wind chills can be dangerous for animals as well. Although animals may not be affected in the same fashion as humans, it's still a good idea to bring pets inside when



A wintry morning

wind chills drop.
While exposure to low

National Weather Service
7506 East 850 North
Syracuse, Indiana 46567

Volume 3, Issue 4
Winter 2001-2002

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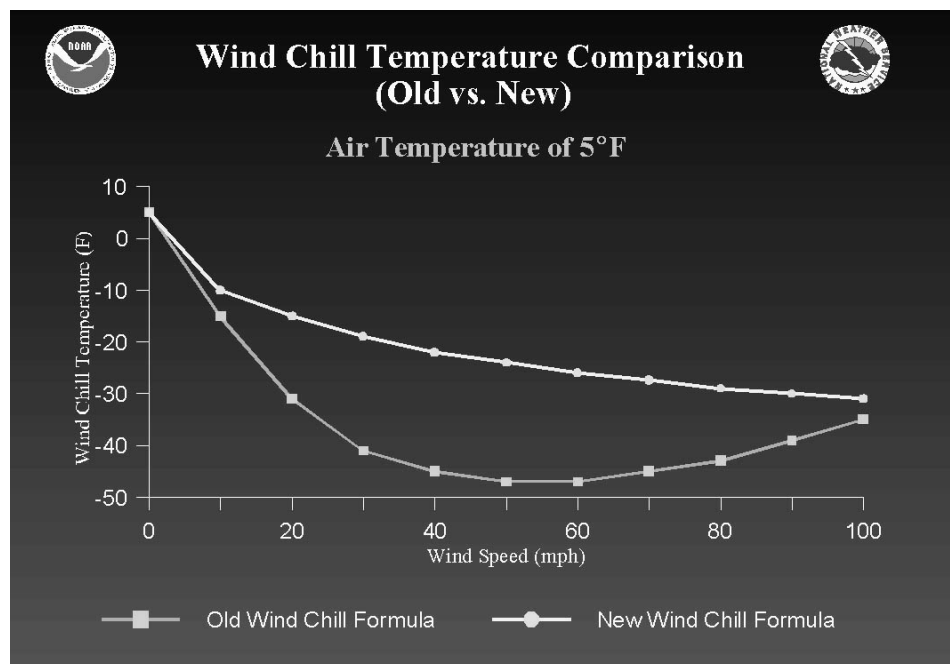
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		Temperature (F)													
Wind (mph)	0	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30
	5	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46
	10	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53
	15	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58
	20	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61
	25	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64
	30	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67
	35	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69
	40	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71
	45	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72
	50	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74
	55	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75
60	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	
Frostbite occurs in less than:							30 min	10 min	5 minutes						

New Wind Chill Index, continued...

wind chills can be life threatening to both humans and animals, the only effect that wind chill has on inanimate objects, such as vehicles, is that it shortens the time it takes the object to cool to the *actual* air temperature (it cannot cool the object down below that temperature). So, if the antifreeze mixture in your car is good to -40° and the air temperature is -15° with a wind chill of -44° , you needn't worry since the vehicle cannot cool below the actual air temperature of -15° .

If you know the air temperature and the wind speed, you can find the wind chill using the chart on



the previous page. Simply find the column corresponding to the temperature, the row corresponding to the wind speed, and locate the intersection of the temperature column and wind speed row. The number at that intersection is the wind chill.

For example, if the temperature is 10° , and the wind speed is 20 mph, then the resulting wind chill is -9° .

The graph above illustrates how wind chill values from the new formula compare to wind chill values using the old formula, utilizing an arbitrary air temperature of 5° . Note that there is a significant difference between the two formulas for most wind speeds above 10 mph. Any rules-of-thumb or guidelines that were developed using the old wind chill calculation should be discarded, and re-evaluated using the new formula.



Don't want to use the wind chill chart? Here's the formula!
Wind chill = $35.74 + 0.6215T - 35.75(V^{0.16}) + 0.4275T(V^{0.16})$
 Where T is the air temperature in degrees Fahrenheit, and V is the wind speed in miles per hour.



Winter Casualties

Most winter deaths are indirectly related to the storm. Traffic accidents are the number one killer, causing 70% of the fatalities. People also die from heart attacks while shoveling heavy snow, and of hypothermia from prolonged exposure to cold.

Most traffic accident fatalities are males

over 40 years old, and most deaths from hypothermia are males over 60 years old.

Of course, everyone is at potential risk during dangerous winter weather. Be sure to dress in layers, drive slowly and defensively, and take frequent breaks while shoveling snow.



What's the Difference?



SNOW

Snow is made of ice crystals that form in the cloud, and survive all the way to the ground as ice crystals. A blizzard happens when winds are over 35 mph with blowing and falling snow reducing visibility to near zero.



SLEET

Sleet forms as liquid in the cloud and falls into a sub-freezing layer of air at or near the surface, freezing the raindrops into small balls of ice. Sleet bounces when it strikes a hard surface, and can accumulate in the same way as snow.



FREEZING RAIN

Freezing rain occurs when the precipitation makes it all the way from the cloud to the ground as liquid, but freezes on contact with cold surfaces on or near the ground, forming a smooth, treacherous glaze of ice.

COLD HARD FACTS

FROSTBITE

Frostbite is damage to body tissue caused by that tissue being frozen. Frostbite causes a loss of feeling and a pale appearance in extremities such as fingers, toes, ear lobes, and the tip of the nose. Frostbite victims should seek medical help as soon as possible. If help is not immediately available, gently re-warm the affected areas. Do not rub snow on frostbitten skin, or rinse with hot water. Use lukewarm water instead.

If the victim is showing signs of hypothermia, warm the body core first, before warming the extremities.

HYPOTHERMIA

Warning signs include uncontrollable shivering, memory loss, disorientation, incoherence, slurred speech, drowsiness, and exhaustion. The victim's temperature may drop below 95°. Immediate medical care is essential!

If medical assistance is unavailable, begin to slowly re-warm the person from the inside out. In other words, warm the body core before the extremities (warming the extremities first drives cold blood to the heart and can cause heart failure). Stay away from hot beverages or food; warm broth is better. Get the person into dry clothing and wrap them in a warm blanket, covering the head and neck.

On January 1, 1864...

...a farmer near Huntertown, Indiana (in Allen County) reported a low temperature of -21° and a *high* temperature of -16° ! In his weather diary he made the remark:

"rough day".

Chicago, IL also reported a high of -16° , and Minneapolis, MN only reached -25° . As the cold

front that brought in this frigid weather passed through Louisville, KY the temperature dropped from 47° to -20° !

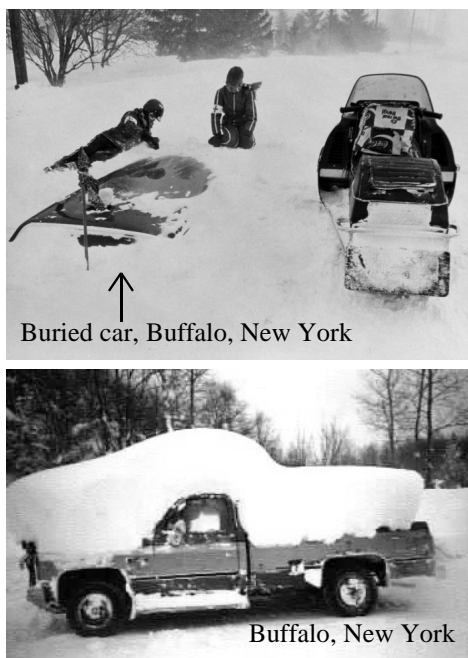
What if You Get Caught in a Winter Storm?

Outside...



- Try to stay dry
- Cover all exposed parts of the body
- Prepare a lean-to, wind-break, or snow cave for protection from the wind
- Build a fire for heat and to attract attention
- Place rocks around the fire to absorb and reflect heat
- Do not eat snow — it will lower your body temperature. Melt it first.
- When camping or hiking it's a good idea to bring along a battery-powered NOAA Weather Radio for the latest information

In a Vehicle...



- Stay in your vehicle. Disorientation occurs quickly in wind-driven snow and cold, even if you think you know the area perfectly.
- Run the motor ten minutes per hour for heat.
- Open the window a little for some fresh air.
- Quickly make sure the exhaust pipe is not blocked
- Turn on your dome light at night when running the engine
- Tie a colored cloth to your antenna or door
- Raise the hood
- Every so often, vigorously move your arms, legs, fingers, and toes for warmth and to keep your blood circulating

In a Building...



- Stay inside. When using alternative heat from a fireplace, wood stove, or space heater, be sure to use fire safeguards and have proper ventilation. Be especially careful with candles.
- If you have no heat source, close off unneeded rooms...stuff towels or rags under doors...and cover your windows at night
- Keep nourished by eating and drinking. Food also provides the body with energy for producing its own heat. Fluids help stave off dehydration.
- Wear layers of light-weight, loose-fitting, warm clothing. Remove layers occasionally to avoid overheating, perspiration, and subsequent chill.

Winter Products Issued by the National Weather Service...

...and what they mean

Dense Fog Advisory

Expect widespread visibilities of less than 1300 feet.

Frost Advisory

Issued when the formation of frost is a possibility. Issued only before October 20 (in the fall).

Freeze Advisory

Issued when temperatures are expected to drop to or below 32°, and remain there for at least 3 hours. Issued only before October 20 (in the fall)

Wind Advisory

This is issued when sustained winds of 30 mph to 45 mph for at least an hour, are imminent or are occurring.

High Wind Watch

This is issued when there is a potential for sustained winds of 40 mph for at least an hour, or 58 mph (non-thunderstorm) winds for any duration.

High Wind Warning

This is issued when sustained winds of 40 mph for at least an hour, or 58 mph (non-thunderstorm) winds for any duration are imminent or are occurring.

Wind Chill Advisory

Winds are expected to be at or above 10 mph, along with wind

chills of -10° to -19°.

Wind Chill Warning

Issued when winds are to be at or above 10 mph and wind chills will be -20° or colder.

Hazardous Weather Outlook

A hazardous weather outlook is issued when there is a good chance of dangerous weather 36 or more hours in the future. Keep an eye on the official National Weather Service forecast to see how the storm takes shape.

Winter Storm Watch

A watch is issued when there is a potential for significant winter weather in the next 12 to 36 hours. Pay close attention to NWS forecasts and follow-up statements detailing what specific threats you can expect from the developing storm.

Winter Weather Advisory

An advisory is issued when winter weather is expected to cause significant inconvenience within the next 12 to 18 hours. Be aware of hazardous conditions such as bad roads and a few inches of snow.

Snow Advisory/Lake Effect

Snow Advisory

Issued when 3 to 5 inches of snow are expected.

Snow/Blowing Snow Advisory

Three to five inches of snow are expected, possibly coupled with considerable blowing and drifting snow. Some roads, especially in rural areas, may be closed.

Freezing Rain/Drizzle Advisory

Issued when light accumulations of ice are expected on most outdoor surfaces.

Heavy Snow Warning/Lake Effect Snow Warning

Issued when snowfalls are expected to accumulate to at least 6 inches in 12 hours, or 8 inches in 24 hours.

Winter Storm Warning

A warning means severe winter weather conditions are occurring or imminent. Winter Storm Warnings are issued for snowstorms and ice storms that create a serious, life-threatening situation. Winter Storm Warnings generally indicate that there is more than one threat, e.g., wind *and* snow, or freezing rain *and* sleet.

Ice Storm Warning

This is issued when ice is expected to accumulate to such a degree that widespread damage occurs. Generally ice accumulations will be greater than a quarter inch. Tree and power line damage can be expected.

Winter Weather Products, continued...

Freezing Rain Warning

Freezing rain is expected to cause accumulations of ice on all surfaces and will make driving treacherous. Some tree limbs and branches may fall from the weight

of the ice.

Blizzard Warning

A blizzard is the most severe type of winter storm, with heavy falling and/or blowing snow, strong winds, near-zero visibility, and

dangerous wind chills lasting for at least three hours. If a blizzard warning is issued, expect a very rough storm, with most modes of transportation ceasing operation. Power outages may also occur.

Be Prepared!

At Home or Work...

Primary concerns are the potential loss of heat, power, telephone service, and a shortage of supplies. Have on hand:

- Flashlight with extra batteries
- Battery powered NOAA Weather Radio
- Extra food and water, especially high energy food such as dried fruit, and food that requires no cooking or refrigeration
- Extra medicine and/or baby items
- A well-stocked first-aid kit
- Dry wood for the fireplace
- An emergency heating source, such as a wood stove, space heater, or clean fireplace (be sure to have proper ventilation)
- Smoke detector and fire extinguisher (make sure they are fresh and operable)
- Bring pets inside. If animals must be left outside, give them plenty of liquid water (most animal deaths in winter storms are from dehydration).

In your car or truck...

- Plan your travel and check the latest NWS forecasts to avoid the storm
- Fully check and winterize your vehicle before with winter season begins
- Keep your gas tank near full (you'll have plenty of gas to get where you're going, and you'll lessen the chance of frozen gas lines)
- Don't travel alone
- Bring cash
- Leave your itinerary and planned route with someone before you leave on a trip

Blankets, sleeping bags, flashlight with extra batteries, first-aid kit, knife, high-calorie non-perishable

Winter Storm Survival Car Kit

food, dry clothes, coffee can with plastic cover, tissues, paper towels, water-proof matches for melting snow, sack of sand or cat litter, shovel, windshield scraper and brush, tool kit, tow rope, booster cables, water container, compass, red flag or cloth for tying to the antenna for summoning help, and current road maps.



SAD

Seasonal Affective Disorder, or “SAD”, is a type of depression that affects half a million people, usually in middle and high latitudes (poleward of 30°, which includes the United States north of a line from Jacksonville, Florida, to New Orleans, to the Big Bend region of Texas).

SAD is caused by a biochemical imbalance in the hypothalamus resulting from shorter days and a general lack of sunlight in winter. SAD can strike anyone, though it is most often found in women, and usually begins between the ages of 18 and 30. For a SAD diagnosis to be given, symptoms must be observed during at least two consecutive winters, and must be severe enough that the person’s well-being is seriously undermined.

Symptoms

Sleep problems: over-sleeping and difficulty staying awake. Sometimes recurrent waking at night

Lethargy: fatigue, inability to

carry out normal routine

Overeating: cravings, especially for carbohydrates and sweets, resulting in weight gain

Depression: feelings of misery, guilt, hopelessness, despair, and apathy

Social problems: irritability and avoidance of social contact

Anxiety: tension and inability to tolerate stress

Illness: most sufferers have weakened immune systems and tend to get sick easily

Treatment

Light therapy has proven effective in 85% of diagnosed cases. One to four hours of bright light per day, from a distance of two to three feet, every day, has shown to be helpful in relieving SAD symptoms.

Normal indoor lighting is not bright enough to alleviate SAD feelings. Most lights commonly used in homes and offices put out 200 to 500 lux (one lux is roughly equivalent to the brightness of a candle). To combat SAD one needs a minimum of 2500 lux. A bright, sunny, summer day can register at

100,000 lux.

“Light boxes” are a convenient way of supplying a full spectrum of fluorescent bright light that SAD sufferers require. The boxes vary in size...some models can fit on a desk, or can be placed on the floor or a wall. They begin to help calm SAD’s symptoms in three or four days. There are several reputable companies that sell light boxes, and most of them even offer at-home trials.

Light boxes are frequently used in the morning, since using them in the evening can cause insomnia. Some light boxes create an artificial dawn by turning on in the morning and getting brighter and brighter as the day progresses.

Psychotherapy, counseling, and complementary therapy are helpful in combination with light boxes. However, most antidepressant and psychotropic drugs have minimal effect, especially without additional therapy.

The good news, though, is that SAD *can* be controlled.

Tornado Outbreak of October 24, 2001

Though the prime season for tornadic activity is April through June, tornadoes can develop under the right circumstances any time of the day, at any time of the year in northern Indiana, northwest Ohio and southern Michigan. The outbreak of October 24, 2001 was proof of that!

That afternoon, conditions were highly favorable for a significant outbreak of severe weather throughout the lower Great Lakes region. A warm, unstable air mass was in place, with southerly winds pumping in a supply of moist air (dew points were in the 65 to 70 degree range).

A cold front approaching from the west was the dividing line between warm air ahead of it and cold air behind it. Temperatures plummeted about 15 degrees within an hour of the front's passage.

This front provided the focus for rapid thunderstorm development. Also, the wind field was conducive to developing strong rotation in the storms that led to tornado development in the strongest storms. The winds at the surface were generally from the southeast to south up to 20 mph. Meanwhile winds just a few thousand feet above the ground were from the southwest at speeds of 50 to 70 mph. This shift in wind direction and increase in wind speed greatly enhanced the threat for not just thunderstorms, but also tornadoes.

Storms developed by mid-morning over central Illinois and moved rapidly northeast, entering northwest Indiana shortly after noon. The storm system took on the shape of a squall line, with embedded tornado-producing thunderstorms.

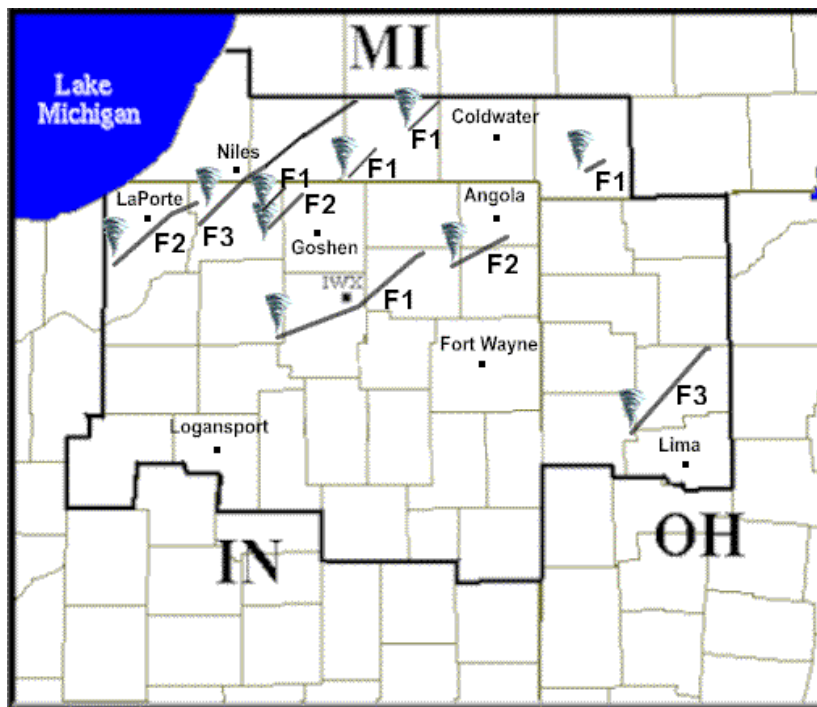
The squall line reached the west

edge of our area at 3pm, and the first tornado of the day touched down at 3:15pm near Wanatah, in LaPorte County. The twister produced F2 damage as it moved northeast and destroyed a trailer home's occupant two hundred feet to her death in a nearby field. Nine more tornadoes would touch down over the following four hours, affecting 15 counties and in addition to the single fatality injuring seventeen people. Millions of dollars in damage was done. The wind recording equipment at Michiana Regional Airport measured a 90 mph wind as an F1 tornado passed overhead.

It was the third largest known outbreak in our area, and by far the largest outbreak ever recorded here in October.



North of South Bend near state line
Photo: Toby Tenharmel



West of Osceola Photo: NWS IWX



North of Osceola near state line
Photo: WSBT-AM

Plan today for your organization's next Severe Weather Spotter Training Session!

It may be hard to think about hail, high winds, and tornadoes at this time of year, but now is indeed the time to schedule your county's, community's, or organization's next severe weather spotter training session.

Times and dates are generally ascribed on a first-come first-served basis, through the end of January. We do our best to give

all the talks during February and March, since by April we're already into the severe weather season.

At a spotter talk you can expect a NWS employee to show an electronic slide show, and possibly a video, describing the mechanics of severe thunderstorm development and characteristics, and how to observe and report those characteris-

tics. Talks can be tailored to the level of expertise among the audience (beginner, intermediate, advanced). The presentation generally lasts one to three hours, depending on the size of the crowd.

To set up your spotter talk, contact NWS Northern Indiana's Warning Coordination Meteorologist, Steve Eddy, at (219) 834-1104 during normal business hours.

Photo: Todd Holsten



Wabash/Kosciusko county line, June 14, 2000

Photo: NWS IWX



Gilboa, Ohio, July 19, 1998

Photo: Todd Holsten



Etna Green, Indiana, June 11, 1998

Photo: Toby Tenharmse



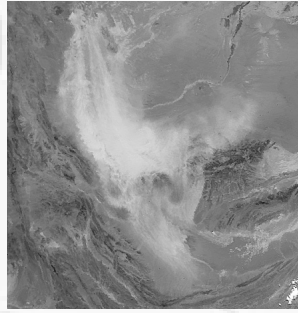
Fort Wayne, Indiana
May 26, 2001

Photo: Toby Tenharmse



Weather in Afghanistan

Afghanistan's climate is greatly influenced by its geography. The south and southwest parts of the country are hot, dry desert plains. Monsoon rains to the east and southeast in Pakistan and India are stopped from reaching this district due to mountains along the western edge of Pakistan. Temperatures in the Rigestan Desert can reach 120°. There are, though, rivers, such as the Helmand and the Khush, that flow through the desert and support the cultivation of cotton and sugar. Central and northeast sections consist of the Hindu Kush mountains, which are a western off-



Afghanistan dust storm

shoot of the Himalayas, and reach heights of 20,000 feet. Winter temperatures on the higher peaks can plunge to -15°. The capital city of Kabul is situated in these mountains, at an elevation of nearly 6000 feet. The bulk of the precipitation in this region falls as snow in the late winter, which melts in the

spring and feeds the nation's rivers. Wet late winter and early spring are followed by dry conditions for the rest of the year. There are four distinct seasons, with hot dry summers, cool dry autumns, cold snowy winters, and temperate wet springs. The north and northwest is made up of foothills and relatively fertile valleys. This area is heavily cultivated and includes Afghanistan's best farmland, though irrigation is necessary to support the crops of herbs, tobacco, and rhubarb. Most of Afghanistan's larger cities are in the northern plains and in the Hindu Kush around Kabul.

Normals at Kabul, Afghanistan

Month	Avg. High	Avg. Low	Precip.
January	40°	19°	1.35"
February	42°	22°	2.37"
March	55°	33°	2.67"
April	67°	43°	2.83"
May	76°	48°	0.92"
June	86°	54°	0.04"
July	90°	60°	0.24"
August	90°	58°	0.06"
September	83°	49°	0.07"
October	72°	39°	0.15"
November	59°	30°	0.73"
December	47°	24°	0.85"
ANNUAL	67°	40°	12.28"

Normals at Fort Wayne for comparison

Month	Av. High	Avg. Low	Precip.
January	30°	15°	1.87"
February	34°	18°	1.91"
March	46°	29°	2.90"
April	60°	39°	3.38"
May	71°	49°	3.44"
June	81°	59°	3.59"
July	85°	63°	3.45"
August	82°	61°	3.37"
September	76°	54°	2.67"
October	63°	43°	2.49"
November	49°	34°	2.79"
December	36°	22°	2.89"
ANNUAL	59°	40°	34.75"



Significant Changes in the Future of EMWIN

The Emergency Managers Weather Information Network (EMWIN) was originally designed as a low cost method of disseminating weather related products directly from satellites to Emergency Managers. EMWIN remains a low cost system, but changes in satellite technology and international laws governing satellites will have significant impacts on its future. Beginning with the GOES-N satellite, scheduled to be launched in 2003, the EMWIN satellite signal will change drastically. Systems that currently receive the satellite signal will likely need some type of an upgrade to their demodulator in order to retrieve the future signal. Fortunately, these changes will not take effect until summer 2003 at the earliest, and more likely 2004 or 2005 when the GOES-N satellite becomes operational.

The current EMWIN datastream shares bandwidth on the WE-FAX channel. WEFAX is a datastream which transmits low resolution, black and white images, but does not require all the bandwidth. EMWIN utilizes the remaining portion of bandwidth to transmit its products. This channel is analog and limited in the amount of data that can be transmitted at one time. Beginning with GOES-N, the WEFAX broadcast will be replaced by the Low Rate Information Transmission (LRIT) broadcast. LRIT will initially operate at 64 Kbps, but eventually expand to 256

Kbps on the GOES-R satellite. This will require use of the entire bandwidth. EMWIN will be moved to its own channel, which will be digital and on a new frequency, but will also be at a lower power level. Current WE-FAX/EMWIN power levels exceed those authorized by the International Telecommunication Union, which is a United Nations agency that oversees an international agreement on satellite broadcasts. The new EMWIN channel is planned to operate at a power level of 44.62 dBm.

The effect of the lower broadcast power will need to be offset by employing a more complex communication protocol. This will likely be done by making a change to the EMWIN demodulator. Tests are being performed by the National Environmental Satellite, Data and Information Service (NESDIS) which will provide information needed by receiver manufacturers to redesign their systems. Once these manufacturers complete engineering analyses and studies with the new data, the exact changes and costs needed to upgrade current systems will be known.

Additional changes to the EMWIN broadcast will include a change in the modulation type from DFSK to BPSK. Forward error correcting coding will also be added to the data transmission, reducing the number of bad data packets received. The EM-

WIN data rate is expected to continue at 9600 bps.

It is still unknown how the transition from the current broadcast to the new broadcast will take place. This and many other questions will be answered in upcoming months as the date of the GOES-N satellite launch approaches. To keep up to date on the status of the new EMWIN broadcast and changes needed in equipment, a special status message will be periodically updated by NWS headquarters, and sent out over the EMWIN datastream as ADMEMW. These messages and more detailed EMWIN information can be found at:

<http://www.crh.noaa.gov/emwin>

and

<http://iwin.nws.noaa.gov/emwin/index.htm>

You may contact the Webmaster (iwx.webmaster@noaa.gov) with any questions about EMWIN. (This story compiled from information provided by NESDIS and NWS Headquarters).



Flood Stage Change at Decatur

Effective on January 1, 2002, the flood stage of the Saint Mary's River at Decatur, Indiana, will be raised to 17 feet. The old flood stage was 15 feet.

The reach of the river gauge, located a mile north of Decatur, extends from one mile upstream to eleven miles downstream.

The highest reading ever seen at Decatur is 26.5 feet, recorded on March 26, 1913.

Following a site survey, the National Weather Service...in coordination with emergency management...determined that a 17 foot flood stage is more indicative of the stage at which damaging flooding begins.

Any questions regarding this change may be addressed to the Service Hydrologist, Greg Lamberty, at (219) 834-1104 x493 (after January 15, 2002, use area code 574 instead of 219).

At 17.5 feet...CR 225 N at Pleasant Mills is flooded, as are low agricultural lands in eastern Adams County.

At 18.5 feet...CR 225 N, just north of Pleasant Mills, is closed. Low areas of Kekionga Park on the south-east side of Decatur flood. Agricultural lands around Pleasant Mills and Willshire are flooded.

At 19.5 feet...Flood waters approach Piqua Road, US 224, OH 49, and IN 101 just north of Pleasant Mills.

At 20.5 feet...IN 101 north of Pleasant Mills is closed. Extensive agricultural flooding.

At 21.5 feet...High water affects US 224, Piqua Road, OH 49 near the state line, and eastern Decatur streets. Residential flooding begins on East Jackson and Ogg streets. Belmont High School campus begins to flood.

At 22.5 feet...US 224 closed to most traffic. Piqua Road begins to flood at Decatur. Evacuations begin on Ogg Street. OH 49 near Willshire is flooded.

At 23.5 feet...US 224 is closed on the east side of Decatur. Many eastern Decatur streets and county roads are flooded. Evacuation of residents from the east side of Decatur near Belmont High School is necessary.

At 24.5 feet...Major flood. Water at top of levee protecting Central Soya. US 33 near Willshire begins to flood. Extensive flooding of the east side of Decatur and Belmont High School.

At 26.5 feet...Record flood. Evacuations in Decatur and Willshire. Serious flooding of the Central Soya plant. Widespread flooding and disruption of land transportation.

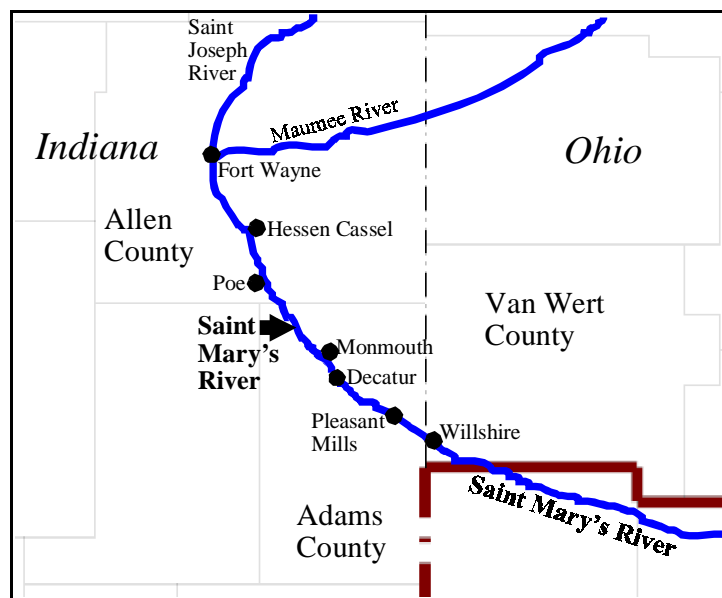


Photo: NWS FWA

The Saint Mary's River spilling out of its banks, submerging Tilman Road at Lower Huntington Road on the south side of Fort Wayne in March of 1982.

SKYWARN Recognition Day



SKYWARN Recognition Day, through the efforts of the National Association for Amateur Radio, the American Radio Relay League, and the National Weather Service, was held on December 1 (Greenwich Mean Time).

The purpose of the event was to celebrate the contributions that amateur radio operators (“hams”) make to the National Weather Service during times of critical weather by receiving weather reports and communicating them immediately to weather service personnel. During SKYWARN Recognition Day, hams across the country tried to contact as many NWS offices as possible using their radio equipment. The contacts



At 2000's event, Mike Murphy N9DCA (left) and Sandy Swartzendruber W9JOE (center) log some more HF contacts. Meanwhile, Paul Van Dyke KB9AVO (right) goes after some digital contacts via PSK31.

that were received were logged at the individual NWS offices by volunteer amateur radio operators.

A total of 62 NWS offices participated in the event, including the Northern Indiana forecast office (WX9IWX). We operated on 80, 40, 20, 10, and 2 meters — voice, cw, and psk31. Certificates with endorsements were offered. To obtain a certificate, the ham sent a log of the stations he worked to the NWS. A special category, the Patriot Endorsement, was set up this year to acknowledge the contributions that amateur operators made during the aftermath of the September 11 attacks. Hams working at the New York City weather office and the Washington, D.C. weather office will earn the endorsement on the special certificate.



AHPS By Greg Lamberty

A new web-based hydrology page has been added to the IWX web site, called Advanced Hydrologic Prediction Service (AHPS). This new page brings the latest river observations, forecasts, and warnings to the public quickly and easily. AHPS also allows one to “travel” along rivers from one weather office’s area of responsibility to another without having to go to the other office’s web address (as of this writing, only offices in NWS Central Region have this service). By 2003, advanced river forecasting techniques will be added to AHPS.

The NWS Cooperative Observer Program

By Brentley Lothamer, Meteorologist Intern at WFO Northern Indiana

The Cooperative Observer Program is the means by which the NWS obtains observational data to support both the climate program and its field operations. A cooperative station is a site at which observations are taken or other services rendered by volunteers or contractors who are not NWS employees and who are not required to take or pass observation certification examinations.

Today the number of volunteers in the NWS is above 10,600. There have been thousands of others in the past also; but the first person to have gotten all of this started was Thomas Jefferson. In 1776 he began to recruit observers in Virginia. With the Organic Act of October 1, 1890, all weather functions were transferred to a new agency called the Weather Bureau (which would eventually become the National Weather Service). Among other duties, one of the primary mandates of

the Organic Act of 1890 was the volunteer weather observer program. This eventually turned into the National Weather Service's Cooperative Observer Program.

The NWS Cooperative Observer Program has been very successful in fulfilling its primary goal of defining the weather and climate of the United States; but its data are also used for a variety of other purposes. The data are used for water and land management, recreation, environmental impact studies, litigation and insurance, energy production and use, engineering, architectural design and construction, and agricultural and farm management.

Today, the Cooperative Observer Network operates basically as it did the first year of its existence over a century ago. Cooperative Weather Stations, scattered over all 50 states, Puerto Rico, and the Virgin Islands, take weather observations seven days a week throughout the

year. The Cooperative Weather Observers provide vital information for their local areas. It is estimated that the Cooperative Weather Observers donate their time to the tune of over a million hours a year, netting the public more per dollar expended than any other government service. Their data become more valuable with time and form the cornerstone of our nation's climatological history.

Cooperative Observers come from all walks of life. Farmers, teachers, lawyers, students, and retirees are just a few examples. Water and pollution control plants, schools and universities, and power plants are also some examples of cooperative observers. Our cooperative observers are spread out throughout northern Indiana, southern Michigan, and northwest Ohio. We have a total of 95 cooperative stations: 67 in Indiana, 14 in Ohio, and 14 in Michigan. If you would like to become a Cooperative Observer, contact us at the NWS Northern IN office.

For more information on the NWS Cooperative Program...

The national co-op observer website: <http://205.156.54.206/om/coop/>

Our local co-op observer website: http://www.crh.noaa.gov/iwx/program_areas/Coop/coop.html

Some local co-op observer data: http://www.crh.noaa.gov/iwx/program_areas/climate/CoopStations.htm

Or, e-mail us at: iwx.webmaster@noaa.gov